

REMARKS

Favorable reconsideration is respectfully requested.

The claims are 16-23. Claims 16-23 are currently amended.

The “12 or more” amendment to claim 16 is supported by the Examples in the present specification. Specifically, Example 3 employs dodecyl triethoxy silane, which has a carbon number of 12, as a starting material and a thermoplastic alkyl siloxane of the present invention is produced. Furthermore, Examples 1 and 2 employ octadecyl triethoxy silane which has a carbon number for the alkyl group of 18. Accordingly, full support for the “12 or more” limitation is present in the specification.

The amendment of the subscript “x” in claim 16 is supported in original claim 1.

The term “layered” has been deleted from the claims in response to the Examiner’s comments in section 5 of the Official Action.

No new matter is added.

The Examiner objects to the specification and abstract over the formula for the layered siloxane, for example, on page 2, line 15 of the specification. The specification and abstract are currently amended in response to the Examiner’s objection.

Claims 16-23 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claim 16 is currently amended to recite that R is an alkyl group of 12 or more carbon atoms. As explained above, this recitation is fully supported in the specification.

Claim 16 is also currently amended to recite that x is between 0.5 and 2. This amendment addresses the Examiner's comments in paragraph 3 of the Office Action.

Claims 16-23 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. As discussed above, the formula in claim 16 is currently amended to respond to the Examiner's comments in the Office Action. In the formula, x is a ratio of silicon atoms bonded with four oxygen atoms (hereinafter SiQ) with respect to the total number of silicon atoms.

In the case of $x=1$, $z=1$, the Si bonded with R (hereinafter SiT) is bonded with three oxygen atoms. When these three oxygen atoms are cross-linked, the coefficient of oxygen bonded with SiT is 1.5. Also, a coefficient of oxygen bonded with SiQ is 2. In practice, some of the oxygen atoms are not cross-linked and exist as OL (e.g., silanol group). Therefore, in the formula the coefficient of oxygen increases by $\frac{1}{2}$ fold with respect to the coefficient of L.

Exhibit 3, Figure 5, included with the June 16, 2008 reply, shows the structure in the case of $x=2$, $z=2$, and when L is H. In this case the formula is $(\text{RSi}_3\text{O}_{6.5}\text{H}_2)_m$.

In the case of $x=1$, $z=1$, the formula is $\text{RSi}_2\text{O}_4\text{L}$. In Exhibit 3, Figure 6, included with the June 16, 2008 reply (when $x=1$, $z=1$, and $\text{L}=\text{H}$) the upper left Si forms $\text{RSiO}_{3/2}$ and the upper right Si forms $\text{SiO}_{3/2}\text{OH}$. Accordingly, the coefficient of oxygen is 4. That is, $3/2$ (oxygen bonded with the upper left Si) + $3/2$ (oxygen bonded with the upper right Si) + 1 (oxygen of OH group bonded with the upper right Si).

For the reasons given above, the rejection under 35 U.S.C. §112, second paragraph, is untenable and withdrawal is respectfully requested.

The Examiner has withdrawn the rejection under 35 U.S.C. §112, second paragraph, regarding the term “layered”, although the Examiner provides additional comments regarding this rejection in section 5, page 3 of the Official Action.

In response, Applicants currently amend the claims to delete the term “layered”.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact the undersigned at the telephone number below.

Respectfully submitted,

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December 22, 2008

ABSTRACT

An alkyl silane compound represented by the general formula RSi(OL)_3 (here, R is an alkyl group, L is H, Si or a group capable of easily changing the OL group into the OH group in a solution or a suspension), a silicon compound represented by the general formula Si(OM)_4 (here, M is H, Si or a group capable of easily changing the OM group into the OH group in a solution or a suspension), and water are reacted in a solvent or a dispersion medium. A thermoplastic layered alkyl siloxane with the composition formula represented by the general formula $(\text{RSi}_{1+x}\text{O}_{2+1.5x+0.5z}\text{L}_z)_m$ (here, R is an alkyl group, L is H, Si or a group capable of easily changing the OL group into the OH group in a solution or a suspension, and $0.5 \leq x \leq 2$, $2 \leq m \leq 200$, $0 \leq z$), which is a thermoplastic inorganic/organic layered composite having good shaping property and dispersing property, capable of transitioning at various temperatures including the vicinity of the room temperature can be provided.